

Remarks/Arguments:

Reconsideration of the application is requested.

Claims 14-21 and 23-34 are now in the application. Claims 14, 32, and 33 have been amended. Claim 34 is being added herewith. Support for claim 34 is found in Figs. 3, 7, 11, and 12 of the instant application. No new matter has been added.

In the third paragraph on page 2 of the above-identified Office action, claims 14-19, 21, and 23-33 have been rejected as being obvious over Yamada et al. (U.S. Patent Application Publication No. 2001/0050717 A1) (hereinafter "Yamada") in view of Shinomiya (DE 102 21 892 A1) under 35 U.S.C. § 103.

The rejection has been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application. The claims are patentable for the reasons set forth below. Support for the changes is in Figs. 3, 7, 11 and 12 of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 14 and 32 call for, *inter alia*:

the lens holder being supported in the thin region of the circuit carrier and disposed directly on the thin region, and the semiconductor device being disposed on an opposite side of the circuit carrier with respect to the lens holder and in the thin region of the circuit carrier.

Claims 33 calls for, *inter alia*:

the thick region defining a frame at least partially surrounding the thin region, the frame clamping the thin region.

Yamada discloses that the stepped wiring board (21) is disposed between the lens unit (3) and the flexible wiring board (5). Yamada does not disclose that the lens unit is disposed directly on a thin region of a circuit carrier.

Shinomiya discloses that a support plate (2b) is disposed between the lens holder (4, 5) and the flex PCB (1), on which the sensor (9) is disposed. Shinomiya does not disclose that the lens holder is disposed directly on a thin region of the

circuit carrier. Therefore, Shinomiya does not make up for the above-noted deficiencies of Yamada.

It is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest all the claim limitations.

The references do not show or suggest the lens holder being supported in the thin region of the circuit carrier and disposed directly on the thin region, and the semiconductor device being disposed on an opposite side of the circuit carrier with respect to the lens holder and in the thin region of the circuit carrier, as recited in claims 14 and 32 of the instant application.

As seen from the above-given remarks, the references applied by the Examiner do not teach or suggest all the claim limitations. Therefore, there is no *prima facie* case of obviousness.

Furthermore, the present invention as claimed provides for a reduction in the elements in the tolerance stack-up between the lens and the sensor surface. More specifically, in the instant application as recited in claim 14, the tolerance

stack-up is as follows: lens (16, 18, 20) + lensholder (14) + thin region of the circuit layer (10a) + contacts of the flip-chip sensor (30).

Whereas Shinomiya discloses an additional support plate (2b) between the lens holder (4, 5) and the Flex PCB (1) on which the flip chip sensor is disposed. As shown in Fig. 12 of Shinomiya, the tolerance stack-up as follows: lens (6) + lensholder (4, 5) + support plate (2b) + glue/adhesive + contacts of the flip-chip sensor (11).

Accordingly, the present invention as claimed, results in the great advantage that the tolerance stack-up is significantly minimized.

Accordingly, as seen from the above-given remarks, claims 14 and 32 are allowable over Yamada in view of Shinomiya. Since claim 14 is allowable, dependent claims 17-19, 21, and 23-31 are allowable as well.

The following further remarks pertain to claim 33 of the instant application.

It is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest all the claim limitations.

The references do not show or suggest the thick region defining a frame at least partially surrounding the thin region, the frame clamping the thin region, as recited in claims 33 of the instant application.

The Examiner did not address the above-noted limitation in the rejection.

Yamada shows that the flexible wiring board (5) is merely placed on top of the stepped wiring board (21). Yamada does not disclose that a thick region of a circuit carrier defines a frame at least partially surrounding the thin region of a circuit carrier, the frame clamping the thin region.

Shinomiya discloses that the Flex PCB (1) is laid on a support plate (2b). Shinomiya does not disclose that a thick region of a circuit carrier defines a frame at least partially surrounding the thin region, the frame clamping the thin region of a circuit carrier. Therefore, Shinomiya does not make up for the above-noted deficiency of Yamada.

As seen from the above-given remarks, the references applied by the Examiner do not teach or suggest all the claim limitations. Therefore, there is no *prima facie* case of obviousness.

Since claim 33 is allowable over Yamada in view of Shinomiya, dependent claim 34 is allowable over Yamada in view of Shinomiya as well.

In the penultimate paragraph on page 4 of the Office action, claim 20 has been rejected as being obvious over Yamada (U.S. Patent Application Publication No. 2001/0050717 A1) in view of Shinomiya (DE 102 21 892 A1) and further in view of Kothmeier (U.S. Patent Application Publication No. 2003/0193609 A1) under 35 U.S.C. § 103. Kothmeier does not make up for the deficiencies of Yamada and Shinomiya. Since claim 14 is allowable, dependent claim 20 is allowable as well.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 14, 32, or 33. Claims 14, 32 and 33 are, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately

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dependent on claims 14 or 33, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 14-21 and 23-33 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

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Please charge any other fees which might be due with respect
to Sections 1.16 and 1.17 to the Deposit Account of Lerner
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Respectfully submitted,

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